Spring Pheasant Surveys
2003

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Abstract

Survey results indicate that pheasant numbers were higher this spring than in 2002. Forty-nine crowing rooster pheasant surveys were conducted this past spring to monitor pheasant population trends throughout Wisconsin's pheasant management counties. In addition to an estimation of populations, these surveys also provide evaluation of wild pheasant restoration projects, including Iowa and Jilin F1 release areas, the Dodge County Private Lands Project, the Glacial Habitat Restoration Area and various cooperative habitat projects using Pheasant Stamp, Wings Over Wisconsin, and Pheasants Forever funds. The 2003 pheasant crowing counts indicate a statewide average of approximately 3.0 roosters per mile^2, a 25% increase from 2002.

Methods

Sex Ratio Surveys

Winter sex ratios were used to extrapolate hen densities from spring crowing rooster counts. In past years, observers searched winter concentration areas and recorded the number of roosters and hens seen in order to develop area-specific sex ratios. Unfortunately, due to budget and personnel constraints, pheasant flushing surveys have not been conducted in several years. For 2002 and 2003 data, the sex ratio was assumed to be the long-term Dodge County Project average of 2.5 hens/rooster.

Crowing Cock Surveys

Spring pheasant surveys were conducted during April and May. Observers initiated their transects approximately 45 minutes before sunrise and usually finished within 1-1.5 hours after sunrise. Observers listened for 3 minutes at stops 0.5 miles apart along the transects and marked locations of crowing roosters on plat maps. Surveys were only conducted when winds were less than 10 miles per hour. Throughout the Dodge County Project area, the GHRA and the GHRA control area, the mean of two counts was used to achieve the roosters per mile^2 index. In the other areas, surveys were run twice and the higher of the two counts are used for comparison. On a few routes, a crowing survey was conducted only once. Survey routes that were not conducted this year were eliminated from the statistical analysis process.

Results

Overall, 2003 surveys indicate a increase in spring crowing rooster pheasant density with a state survey mean of 3.0 roosters per mile^2 compared to 2.4 roosters per mile^2 in 2002. Of the 49 crowing cock surveys run, only 47 were used in the 2003 totals because of incomplete route information. Of the routes run, 77% increased (n=36), 21% (n=10) declined and 2% (n=1) showed no change when compared to the 2002 counts.

Dodge County Project

The Dodge County Project was initiated in 1984 to evaluate the effectiveness of private land habitat management and development in areas that have satisfactory winter cover and remnant pheasant populations. Nesting cover and food plots were developed in a two-mile radius around six different major pheasant wintering areas. Although the management phase of this

project concluded in 1994, surveys continue to be conducted to monitor pheasant populations.

Spring surveys indicated an overall 59% population increase in the 5 Dodge County survey areas. The 2003 hen index data indicates that hen densities are above the long-term average for Dodge County, with this year's index at 6.8 hens/mile^2 and the long-term average at 6.0 hens/mile^2 (Figure 1).

Glacial Habitat Restoration Area

The Glacial Habitat Restoration Area (GHRA) is a habitat improvement program initiated in 1990 focused on purchasing, easing and improving wildlife habitat through scattered parcels of property in 24 townships in parts of Winnebago, Fond du Lac, Dodge, and Columbia Counties. The GHRA covers 530,000 acres in these counties. Wetland and grassland restoration projects focused on improving habitat for pheasants and other upland and wetland wildlife species are conducted throughout the project area. The goal of the project is to restore 11,000 acres of drained wetlands and 38,000 acres of grasslands within the area's boundaries. With increased cuts in personnel and management dollars throughout the project area, an increased backlog of properties requiring upland conversion and wetland restoration has developed.

The department's wildlife program is continuing to invest pheasant stamp funds as well as federal NAWCA grant dollars in the GHRA to further habitat development work in these areas. Population indices on the GHRA surveyed areas averaged 52% higher than in 2002, with a range for individual surveys from -25% to +233% (Table 1).

The 2003 hen index data indicates that hen numbers are above the long-term average for the Glacial Habitat Restoration Area, with this year's index at 5.1 hens/mile^2 and the long-term average at 4.4 hens/mile^2 (Figure 2).

GHRA Control Areas

GHRA control area surveys are conducted in order to compare pheasant numbers where active management under the Habitat Restoration Area Program is not occurring. The GHRA control areas are surveys are run with 2 routes in each survey area, and each survey is run twice. The number of roosters per mile^2 increased in these units by 54% to 2.0 roosters per mile^2, an increase from the 2002 average of 1.3 roosters per mile^2 (Table 1). The mean hen index in the GHRA Control Area is 5.0 hens/mile^2 this is an 52% increase from 3.3 hens/mile^2 in 2002.

Other Control Areas

In order to effectively evaluate the Iowa and Jilin F1 projects, department personnel in conjunction with Wings Over Wisconsin and Pheasants Forever members ran surveys on control areas in St. Croix, Rock, Jefferson, and Polk counties. These areas have generally had recent habitat improvements due to CRP or pheasant stamp projects, but they have not received wild bird releases. The number of roosters per mile^2 decreased in these units 24% to 4.2 roosters per mile^2, down from the 2002 average of 5.5 roosters per mile^2 (Table 1). The mean hen index in these survey routes is 10.4 hens/mile^2 this is a 24% decrease from 13.8 hens/mile^2 in 2002 (Figure 4).

Iowa Pheasant Release Areas

Three new project areas received Iowa pheasant releases starting in 2000. These new areas are Green Lake County-Markesan F1 area, Manitowoc County-Centerville area, and Eau Claire County-Clear Lake area.

The average number of roosters per mile^2 in the Iowa Pheasant Release Areas increased 30% to 2.7 roosters per mile^2 in 2003 (Table 1). The one-year change in the numbers of roosters per mile^2 in the Iowa F1 release areas ranged from a decline of 39% in the Manitowoc-Centerville release area to an increase of 146% in Iowa-Western release area. Due to incomplete surveys, not all routes were considered in calculating the totals. When making a comparative analysis, this fact must be considered. The 2003 hen index data indicates that hen numbers are above the long-term average for the Iowa Pheasant Release Areas, with this year's index at 6.8 hens/mile^2 and the long-term average at 5.2 hens/mile^2 (Figure 5).

Jilin (Manchurian) Pheasant Release Areas

The number of roosters per mile^2 increased 75% in the Jilin Pheasant Release Area (4.6 roosters per mile^2, up from the 2002 average of 2.6 roosters per mile^2 (Table 1). The number of roosters per mile^2 ranged from 0.5 in the Manitowoc-2 Rivers/2 Creeks areas to 8.4 in the Green Lake-Markesan release. Not all Jilin release routes were run in 2003.

The 2003 hen index data indicates that hen numbers are above the long-term average for the Jilin Pheasant Release Areas, with this year's index at 11.5 hens/mile^2 and the long-term average at 6.3 hens/mile^2 (Figure 6).

Discussion

Statewide 2003 crowing count results show an increase of 25% in crowing indices. Scattered population changes typically cannot be pinpointed to one cause; however, some effects may include isolated weather conditions, land use changes, or crowing count survey or surveyor discrepancies. Throughout much of the state, winter temperatures (2002-2003) were above average and most areas had little snowfall. The overall increase may be the result of milder winters coupled with last year’s good recruitment.

This year, spring conditions throughout the state were milder than usual and below average in rainfall. This would have a positive influence on recruitment. Data gathered from the 10-week brood surveys should give a better indication of 2003 production. Past research from Wisconsin has shown that weather during prenesting is the biggest factor in year-to-year population fluctuation.

Although survey information is published yearly, it is important to remember that **long-term trends** and comparison to **long term averages** are more valuable than year-to-year or area-to-area comparisons. Each year, the surveys are conducted by different individuals. These surveyors may not have the same experience as another and may not hear all of the crowing roosters or may “double-count” some roosters. However, long-term annual index changes for many areas with a similar treatment should provide good indications of the direction of population trends for these treatment areas. The long-term trend in pheasant populations currently looks positive relative to the 1980’s with a statewide hen index of 7.6 hens/mile^2 in 2003 and a long-term average of 5.6 hens/mile^2. Continued emphasis is needed on research, habitat development, management, and maintenance to ensure stable pheasant populations in the future.

Table 1. *Relative change in 2003 pheasant crowing cock densities and hen indices relative to 2002 results.*

Project	Unit	Method	Roosters per sq.mi-'02	Roosters per sq.mi-'03	% Change for Roosters	Hens/ Cock	Hen Index '02	Hen Index '03	% Change for Hens
Dodge County									
	Elba	Mean 2 cts.	2.6	4.3	64%	2.5	6.5	10.8	65%
	Calamus	Mean 2 cts.	1.8	2.4	36%	2.5	4.5	6.0	33%
	Trenton	Mean 2 cts.	0.9	1.4	63%	2.5	2.3	3.5	56%
	Clyman	Mean 2 cts.	0.8	2.6	225%	2.5	2.0	6.5	225%
	Fountain Prairie	Mean 2 cts.	2.5	2.9	15%	2.5	6.3	7.3	16%
Dodge Co. Mean			**1.7**	**2.7**	**59%**		**4.3**	**6.8**	**58%**
GHRA									
	Winnebago-Pumpkinseed	Mean 2 cts.	0.8	0.9	14%	2.5	2.0	2.3	13%
	Winnebago-Waukau	Mean 2 cts.	0.4	0.3	-25%	2.5	1.0	0.8	-25%
	Winnebago-Pickett	Mean 2 cts.	1.4	1.5	8%	2.5	3.5	3.8	7%
	Fond du Lac-Ripon	Mean 2 cts.	1.8	2.3	31%	2.5	4.5	5.8	28%
	Fond du Lac-Rosendale Cntr.	Mean 2 cts.	1.0	3.3	233%	2.5	2.5	8.3	230%
	Fond du Lac-Silver Creek	Mean 2 cts.	1.1	3.5	227%	2.5	2.8	8.8	213%
	Fond du Lac-Eldorado	Mean 2 cts.	3.5	3.2	-7%	2.5	8.8	8.0	-9%
	Fond du Lac-Ladoga	Mean 2 cts.	2.5	2.3	-8%	2.5	6.3	5.8	-9%
	Dodge-Alto	Mean 2 cts.	0.9	1.9	118%	2.5	2.3	4.8	107%
	Dodge-Fox Lake	Mean 2 cts.	1.3	2.3	76%	2.5	3.3	5.8	74%
	Dodge-Randolph	Mean 2 cts.	0.6	1.5	138%	2.5	1.5	3.8	150%
	Columbia-Courtland	Mean 2 cts.	0.9	1.4	54%	2.5	2.3	3.5	52%
GHRA Mean			**1.3**	**2.0**	**52%**		**3.4**	**5.1**	**50%**
GHRA Controls									
	Columbia-Otsego	Mean 2 cts.	1.4	1.9	33%	2.5	3.5	4.8	36%
	Columbia-Hampden	Mean 2 cts.	1.5	2.9	97%	2.5	3.8	7.3	93%
	Columbia-Lebanon	Mean 2 cts.	1.0	3.5	254%	2.5	2.5	8.8	250%
	Green Lake-Puckyan	Mean 2 cts.	1.8	1.3	-29%	2.5	4.5	3.3	-28%
	Dodge-Ashippun	Mean 2 cts.	0.8	0.4	-49%	2.5	2.0	1.0	-50
GHRA Control Mean			**1.3**	**2.0**	**54%**		**3.3**	**5.0**	**52%**
Other Controls									
	St. Croix-New Richmond	2 cts/ 1 wy	2.3	2.6	13%	2.5	5.8	6.5	13%
	Rock-West Beloit	2 cts/ 1 wy	2.9	1.9	-34%	2.5	7.3	4.8	-34%
	Jefferson-Oakland	2 cts/ 1 wy	1.0	1.6	60%	2.5	2.5	4.0	60%
	Polk	2 cts/ 1 wy	15.8	10.6	-33%	2.5	39.5	26.5	-33%
Other Controls Mean			**5.5**	**4.2**	**-24%**		**13.8**	**10.4**	

Table 1. *cont.*

Project	Unit	Method	Roosters per sq.mi-'02	Roosters per sq.mi-'03	% Change for Roosters	Hens/ Cock	Hen Index '02	Hen Index '03	% Change for Hens
Iowa F1 Releases									
88-90	Rock/Dane - Union Township	2 cts/ 1 wy	0.3	0.3	0%	2.5	0.8	0.8	0%
88-90	Iowa - Western	2 cts /1 wy	1.3	3.2	146%	2.5	3.3	8.0	146%
91-92	Green-North Monroe	2 cts/ 1 wy	3.9	4.5	15%	2.5	9.8	11.3	15%
91-93	St. Croix-Boardman	2 cts/ 1 wy	2.0	3.8	90%	2.5	5.0	9.5	90%
94-96	Manitowoc-Collins	2 cts/ 1 wy	1.6	3.0	88%	2.5	4.0	7.5	88%
94-96	Walworth-Spring Prairie	1ct/ 1wy	0.5	0.7	40%	2.5	1.3	1.8	40%
94-96	Columbia-Springvale	2 cts/ 1 wy	1.0	1.7	70%	2.5	2.5	4.3	70%
94-96	Dodge-Mayville	2 cts/ 1 wy	1.1	N/A	N/A	2.5	2.8	N/A	N/A
96-98	Grant - Clifton Township	2 cts/ 1 wy	3.3	3.2	-3%	2.5	8.3	8.0	-3%
96-98	Dodge-Beaver Dam1	2 cts/ 1 wy	2.2	3.2	45%	2.5	5.5	8.0	45%
97-99	Iowa - Eastern	2 cts/ 1 wy	2.0	2.3	15%	2.5	5.0	5.8	15%
97-99	Sheboygan Marsh	2 cts/ 1 wy	N/A	2.2	N/A	2.5	N/A	5.5	N/A
97-99	Pepin/Dunn	2 cts/ 1 wy	3.3	3.2	-3%	2.5	8.3	8.0	-3%
97-99	Winnebago-Rat River	2 cts/ 2 wy	1.7	2.7	59%	2.5	4.3	6.8	59%
00-02	Green Lake-Markesan F1	2 cts/ 1 wy	3.1	4.4	42%	2.5	7.8	11.0	42%
00-02	Manitowoc-Centerville	2 cts/ 1 wy	3.1	1.9	-39%	2.5	7.8	4.8	-39%
00-02	Eau Claire-Clear Creek	2 cts/ 1 wy	2.1	4.5	114%	2.5	5.3	11.3	114%
00-02	Walworth-New Richmond	1ct/ 1 wy	N/A	0.6	N/A	2.5	N/A	1.5	N/A
00-02	Green Lake-Manchester	2cts/ 1 wy	2.9	3.3	14%	2.5	7.3	8.3	14%
Iowa F1 Mean			**2.1**	**2.7**	**30%**		**5.2**	**6.8**	**30%**
Jilin F1 Releases									
92-93	Dane-EDHRA	2 cts/ 1 wy	1.2	2.6	117%	2.5	3.0	6.5	117%
92-94	Dunn Co.-Muddy Creek W.A.	2 cts/ 1 wy	2.6	5.0	92%	2.5	6.5	12.5	92%
92-94	Green Lake-Markesan	2 cts/ 1wy	5.8	8.4	45%	2.5	14.5	21.0	45%
92-94	Fond du Lac-Waupun	2 cts/ 1 wy	3.1	6.4	106%	2.5	7.8	16.0	106%
92-94	Jefferson-Waterloo	1 ct/ 1 wy	N/A	N/A	N/A	2.5	N/A	N/A	N/A
93-95	Ozaukee-Belgium	2 cts/ 2 wys	N/A	N/A	N/A	2.5	N/A	N/A	N/A
93-95	Sheboygan-Holland	2 cts / 2 wys	N/A	N/A	N/A	2.5	N/A	N/A	N/A
95-97	Manitowoc-2 Rivers/2 Creeks	2 cts/ 1 wy	0.4	0.5	25%	2.5	1.0	1.3	25%
Jilin F1 Mean			**2.6**	**4.6**	**75%**		**6.6**	**11.5**	**75%**
State Mean			**2.4**	**3.0**	**25%**		**6.1**	**7.6**	**25%**

N/A Incomplete data for the project area

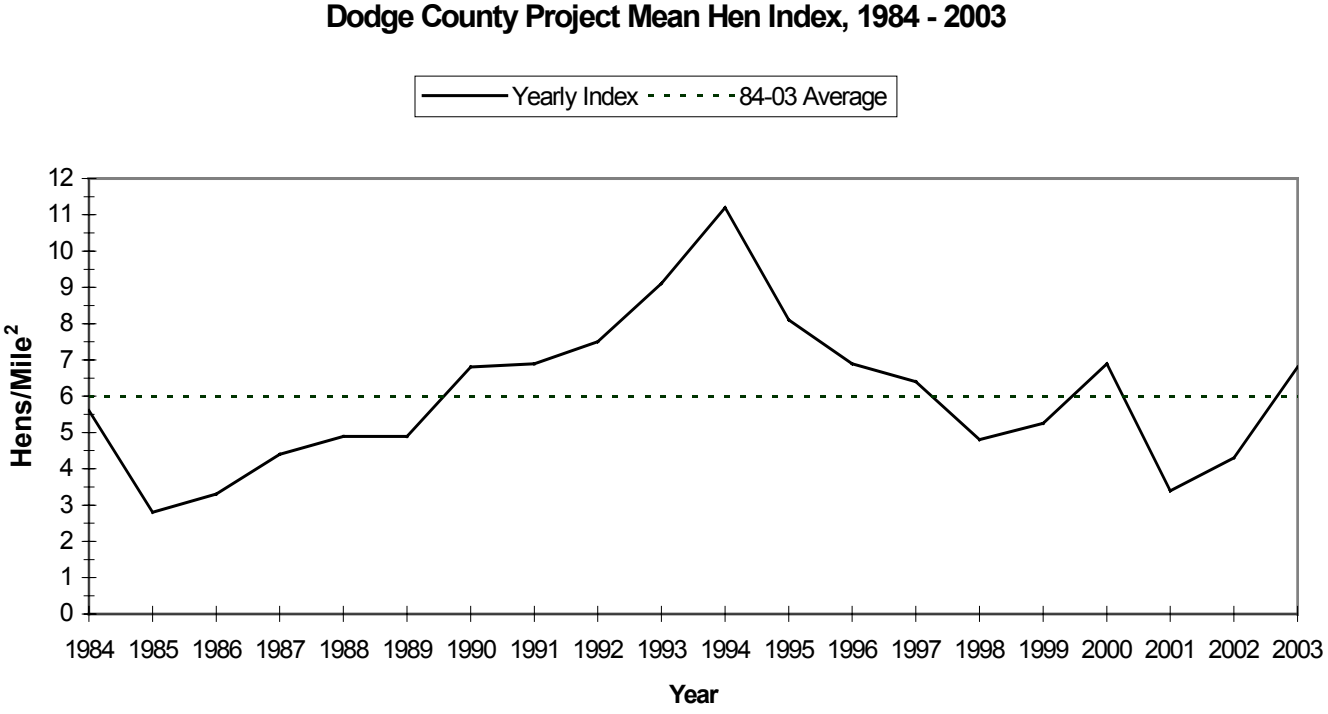

Figure 1. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on study areas of the Dodge County Private Lands Project, 1984-2003.*

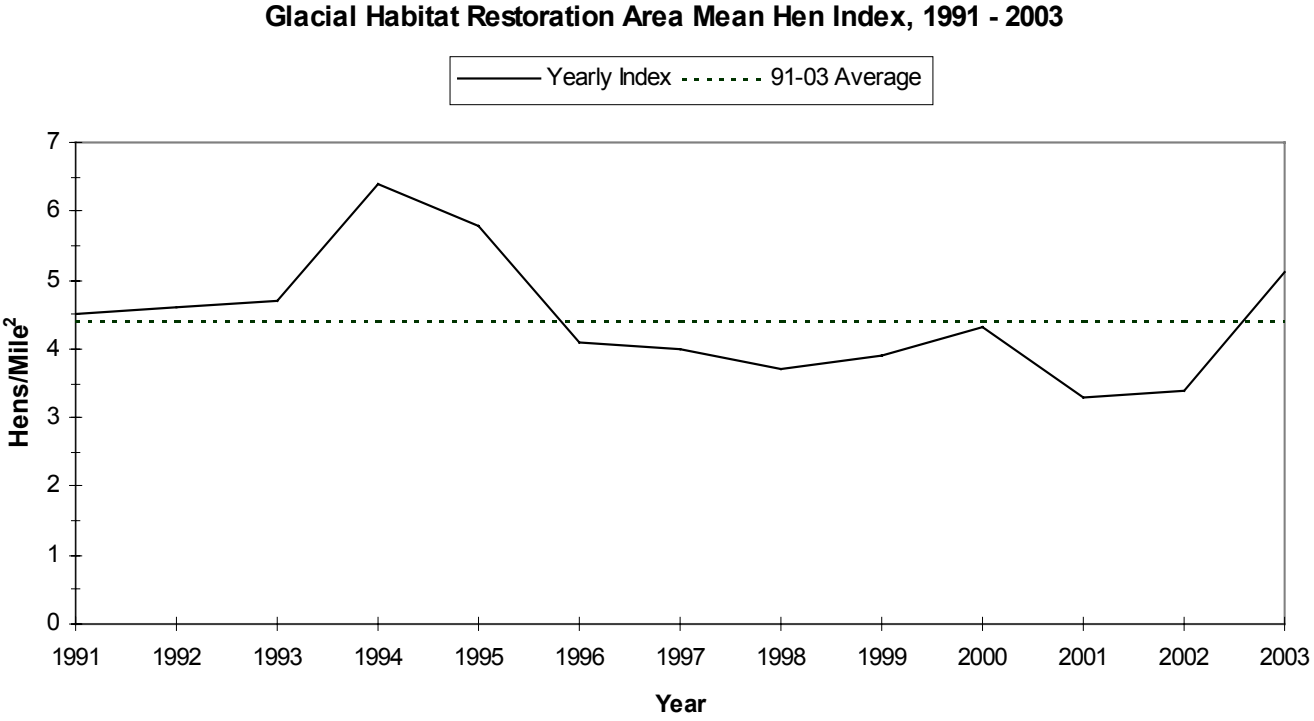

Figure 2. *Pheasant hen indices (cocks heard/square mile x hens/cock) on the Glacial Habitat Restoration Area, 1991-2003.*

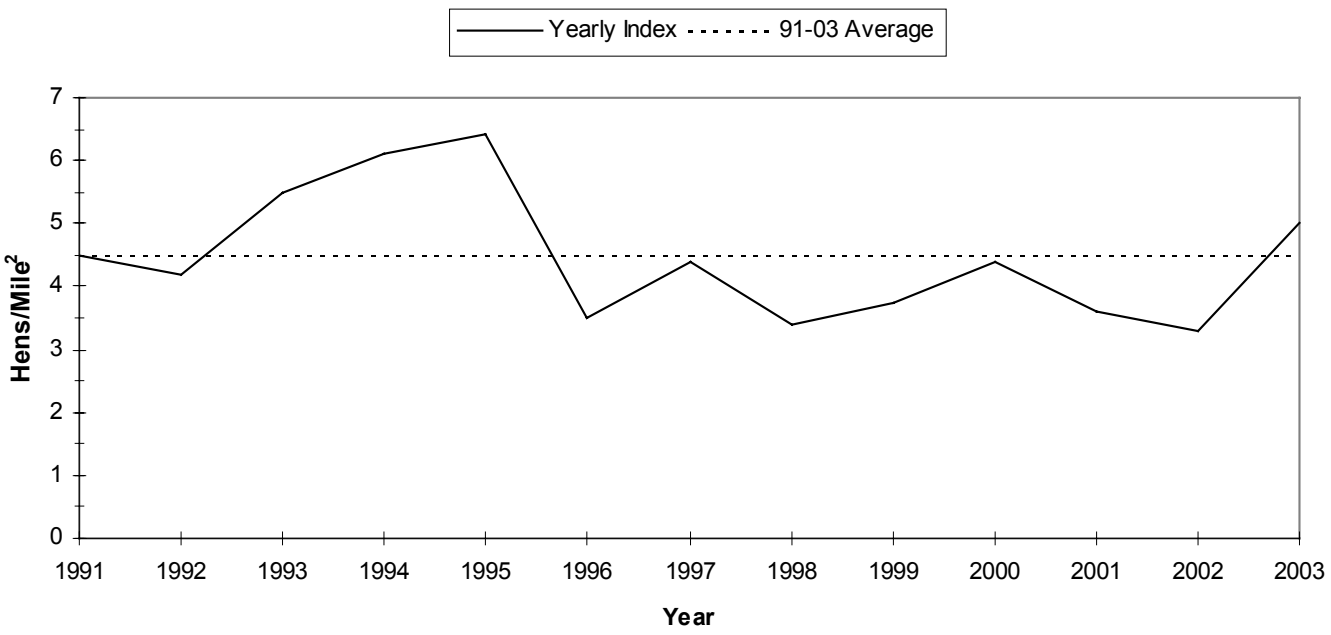

Figure 3. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on GHRA control areas, 1991-2003.*

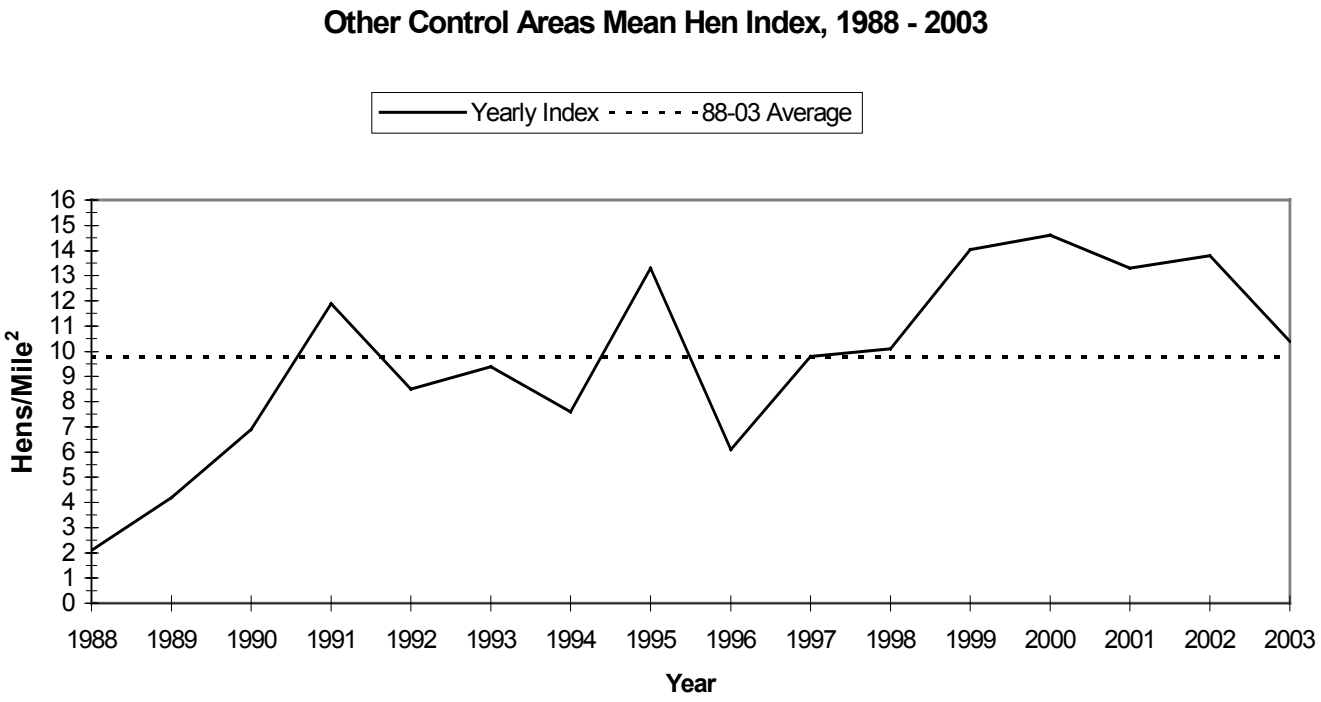

Figure 4. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on control areas around Wisconsin, 1988 –2003.*

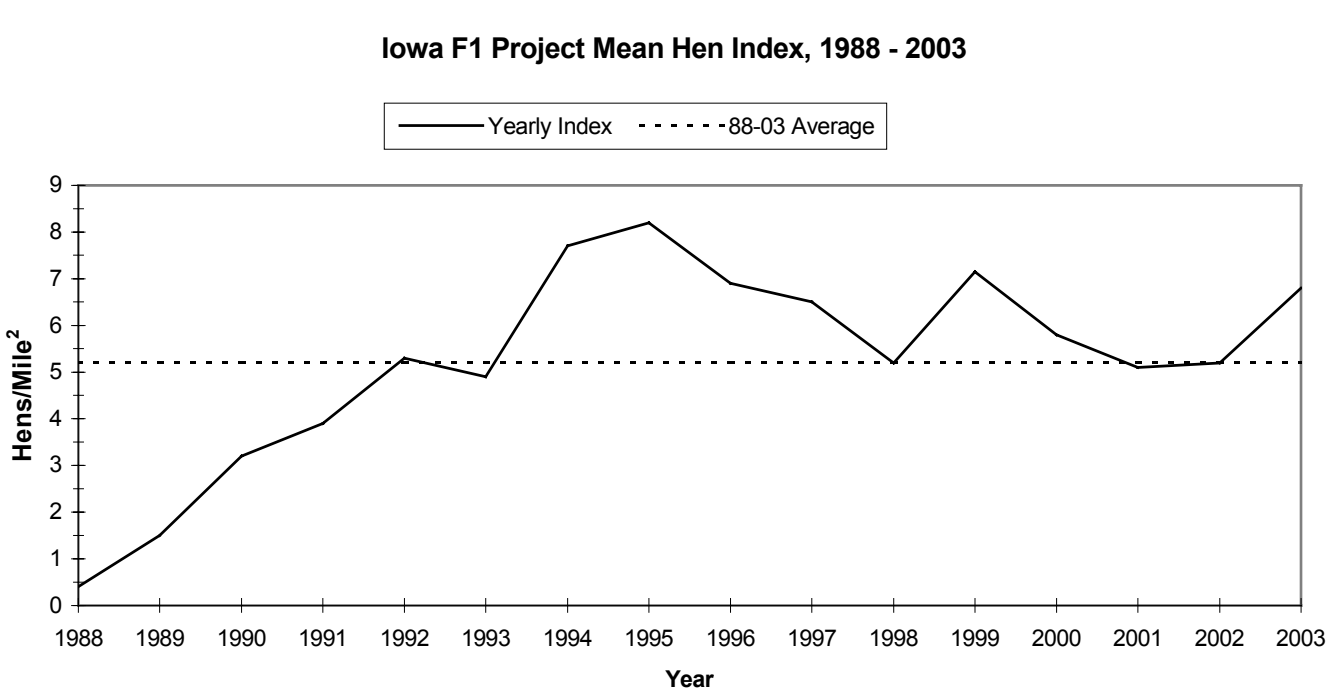

Figure 5. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Iowa F1 pheasant release sites, 1988 -2003.*

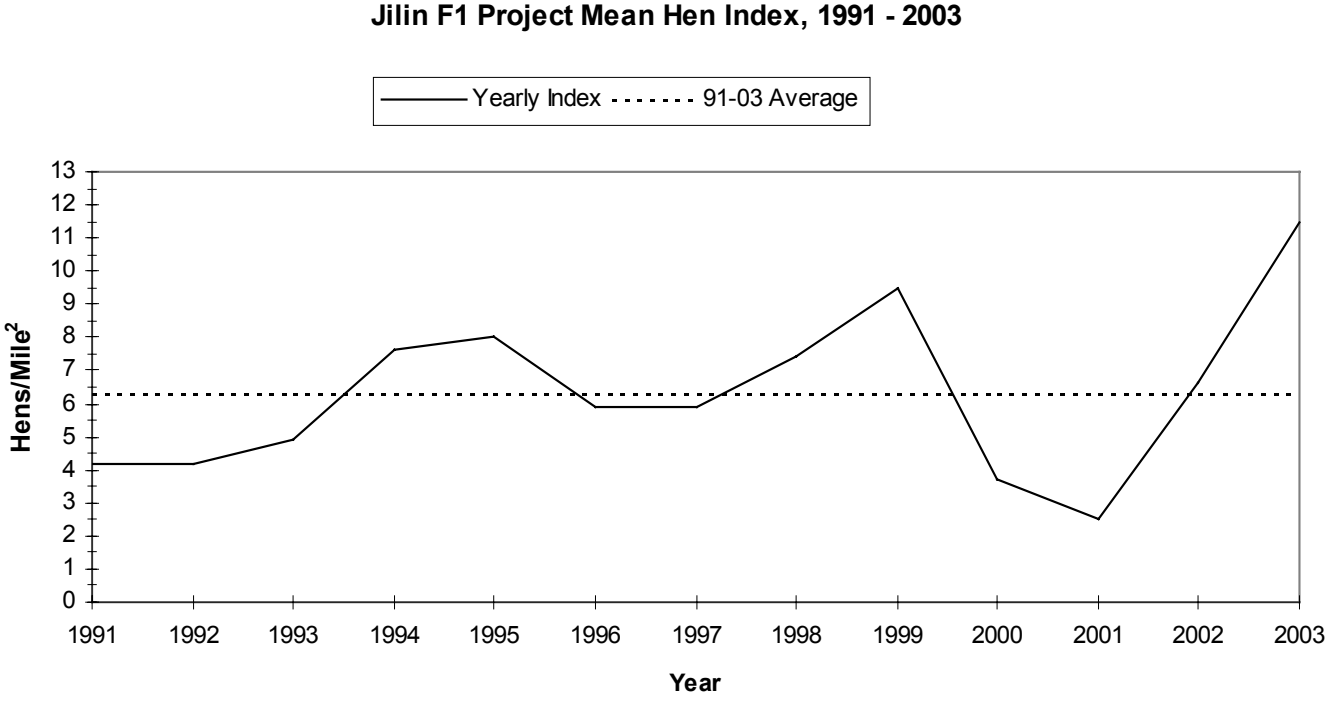

Figure 6. *Mean pheasant hen indices (cocks heard/square mile x hens/cock) on Jilin F1 pheasant release sites, 1991-2003.*

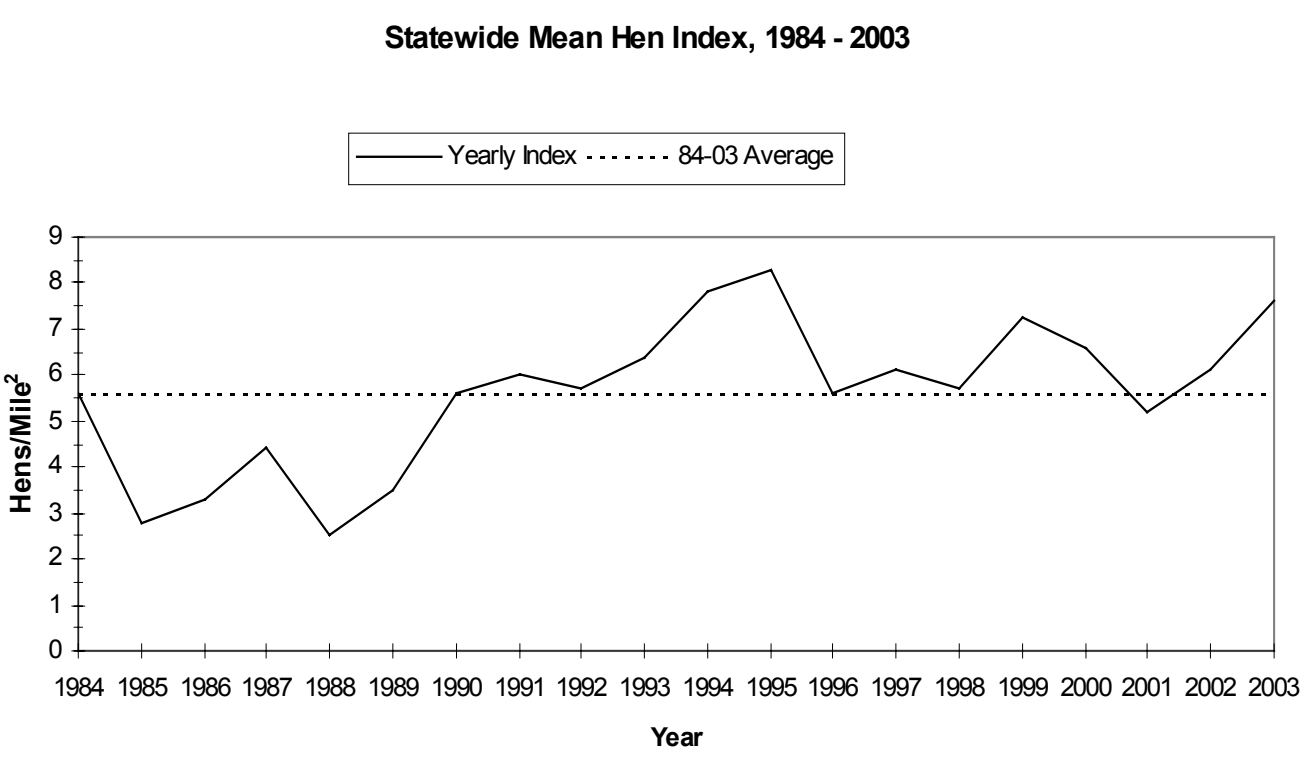

Figure 7. *Statewide pheasant hen indices (cocks heard/square mile x hens/cock), 1984-2003.*